



Rainfall and outbreaks of drinking water related disease and in England and Wales

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Abstract:

A case-crossover study compared rainfall in the 4 weeks before drinking water related outbreaks with that in the five previous control years. This included public and private drinking water related outbreaks in England and Wales from 1910 to 1999. Of 111 outbreaks, 89 met inclusion criteria and the implicated pathogens included *Giardia*, *Cryptosporidium*, *E. coli*, *S. Typhi*, *S. Paratyphi*, *Campylobacter* and *Streptobacillus moniliformis*. Weather data was derived from the British Atmospheric Data Centre. There was a significant association between excess cumulative rainfall in the previous 7 days and outbreaks (pEuro Surveillance (Bulletin European Sur Les Maladies Transmissibles; European Communicable Disease Bulletin) 0.001). There was an excess of rainfall below 20 mm for the three weeks previous to this in outbreak compared to control weeks (pEuro Surveillance (Bulletin European Sur Les Maladies Transmissibles; European Communicable Disease Bulletin) 0.002). Cumulative rainfall exceedances were associated with outbreak years. This study provides evidence that both low rainfall and heavy rain precede many drinking water outbreaks and assessing the health impacts of climate change should examine both.

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Resource Description

Exposure :

weather or climate related pathway by which climate change affects health

Precipitation

Geographic Feature:

resource focuses on specific type of geography

Freshwater

Geographic Location:

resource focuses on specific location

Non-United States

Non-United States: Europe

European Region/Country: European Country

Climate Change and Human Health Literature Portal

Other European Country : England;Wales

Health Impact: ☒

specification of health effect or disease related to climate change exposure

Infectious Disease

Infectious Disease: Foodborne/Waterborne Disease

Foodborne/Waterborne Disease: Campylobacteriosis, Cryptosporidiosis, E. coli, General Foodborne/Waterborne Disease, Giardiasis, Salmonellosis

Foodborne/Waterborne Disease (other): Streptobacillus moniliformis

Mitigation/Adaptation: ☒

mitigation or adaptation strategy is a focus of resource

Adaptation

Resource Type: ☒

format or standard characteristic of resource

Research Article

Timescale: ☒

time period studied

Time Scale Unspecified

Vulnerability/Impact Assessment: ☒

resource focus on process of identifying, quantifying, and prioritizing vulnerabilities in a system

A focus of content